

What is claimed is:

1. A mobile karaoke system comprising :

- a mobile wireless transmitter,
- collection of authorized legal cartridges with a pre-stored musical accompaniment,
- a mobile device for receiving signals from a transmitter,
- a mobile device for conversion of received signals into an acoustic sound,

wherein, the mobile wireless transmitter has a body that a performer holds, moves and controls conveniently; the body comprising inside or on a top of it following components:

a microphone for input of an acoustic signal,

a control panel for selection of a desired melody by the performer,

a microprocessor,

a synthesizer, said synthesizer is integrated with the microprocessor and is programmed to provide adjustment of tone, rhythm and tempo, sound delay, echo level and artificial reverberation as well as volume of a performance,

a scanning device for searching of a musical accompaniment with a decoder, a memory that contains data of the musical accompaniment for a limited number of songs and said memory is linked to an interface connector via a multiplexer for plugging-in at least one of the many cartridges;

said memory is made in form of a bed or a socket that provides for convenient input and fixing of the cartridge being plugged into interface connector;

the body contains a device for conversing and processing of a singer's voice, for getting a first signal and playback a musical signal as a second signal;

a device for generation of a resulting output electric signal as a third signal that is produced by mixing the first and the second signals and for further transmission said third signal in a form of a modulated emission into surrounding space,

said third signal being received by a mobile device for receiving of the transmitted signals;

auxiliary decoder for communication with the cartridge via the interface connector, which enables to recognize the authorized legal cartridge that is protected against unauthorized access by an authorized key code device with an access password to prevent operation of the mobile wireless transmitter with an unauthorized and/or an illegal cartridge or an any other information storage media that has no authorized key coding device with such access password;

wherein, each cartridge of the collection contains Read-Only-Memory chips, said Read-Only-Memory chips are linked to each other and to the interface connector; the Read-Only-Memory chips are used for storage of the coded data of the musical accompaniment, chips of authorized key identification and coding device with the access password that are used to prevent unauthorized access to the data that is stored in Read-Only-Memory of the cartridge and to identify that the cartridge belongs to the collection.

2. The mobile karaoke system of claim 1, wherein the mobile wireless transmitter transmits a modulated optical signal, and the mobile receiving device is arranged in a form of "n" optical receivers, where "n" is a whole number not less than 1.

3. The mobile karaoke system of claim 1, wherein the mobile wireless transmitter transmits a modulated acoustic ultrasonic signal, and the mobile receiving device is arranged in a form of "n" ultrasonic receivers, where "n" is a whole number not less than 1.

4. The mobile karaoke system of claim 1, wherein the mobile wireless transmitter transmits a modulated radio signal in a first frequency band, which is specially selected to provide for an electromagnetic compatibility with other active radio sources as well as with devices that are sensitive to radio emission, and the mobile receiving device is arranged in a form of "n" converters/repeaters (where "n" is a whole number not less than 1) for further transmission of the received signal in a second band to "n" radios.

5. The mobile karaoke system of claim 4, wherein the first frequency band has a range of 26-30 MHz and the second band has a range of 67-108 MHz.

6. The mobile karaoke system of <sup>claim 4</sup> ~~claims 4 or 5~~, wherein the transmitter transmits the radio signal on a carrier frequency  $f_0$  that falls into the first band, and the receiver incorporates "n" individual converters/repeaters where "n" is a whole number not less than 1; the converter/repeater "i" ("i" is 1,2...n) receive signals on the carrier frequency  $f_0$  and performs its further transmission in a form of frequency-modulated radio signal on a carrier frequency  $f_i$  that falls into the second band; the converters/repeaters is located in "n" areas of consistent reception of the transmitter signals, and the device used to convert the received radio signal into acoustic signal is arranged in form of "n" home radios that receives radio waves in the second band, wherein, radio set "i" (where "i" is 1,2..., n) is tune to receive radio carrier frequency  $f_i$  that is radiated by the converter/repeater "i" and this radio set is close to it.

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7. The mobile karaoke system of claim 1, wherein the mobile wireless transmitter transmits the modulated electromagnetic signal of near field, and the mobile receiver is arranged in a form of "n" electromagnetic converters of near field (where "n" is a whole number not less than 1) that are linked to "n" respective acoustical-electrical transducers/amplifiers.

a 8. The mobile karaoke system of <sup>claim 4</sup>~~claims 4, 5, 6 or 7~~, wherein the transmitter is upgraded with an additional device for locking the transmission of signals in the second frequency band.

9. A method provided electromagnetic compatibility for a mobile karaoke system, the method includes the following steps:  
 selecting musical data from a memory with an interchangeable cartridge  
 and decoding said musical data for obtaining a first signal;  
 receiving and converting an acoustic signal via a microphone for obtaining a second signal,  
 processing the first and second signals;  
 the resulting output electric signal being shaped and a radio signal being generated and transmitted at a carrier frequency  $f_0$  that falls into a first band, which is allocated for free usage subject to limited radiation power;  
 modulating the radio signal as the resulting electric signal with a given limited radiation power  $P_1$ ;  
 receiving this radio signal in various "n" areas by "n" transceivers of the first type and transforming this radio signal and re-radiating by each of the transceivers of the first type at a frequency  $f_i$  that falls into a second band;  
 wherein a power of radiation here being not higher than  $kP_1$  where  $k < 0,1$ ;  
 receiving repeated signal independently in each area "i" (" $i$ " = 1,2,..., n) at a carrier frequency  $f_i$  by a radio receiver "i" of a second type; and,  
 converting the radio signal into acoustic sound.

10. The method of claim 9, wherein the first band falls to the range of 26-30MHz and the second band falls to the range of 67-108MHz.

a 11. The method of <sup>claim 10</sup>~~claims 9 or 10~~, wherein the radio receiver of the second type being replaced with a standard broadcast radio with radio frequency band that includes at least one of following ranges: either 67-88MHz or 88-108MHz.

a 12. The method of <sup>claim 9</sup>~~claims 9, 10, or 11~~, wherein a distance  $L_i$  between the devices of the first and second type in each area shall not exceed the maximum length of any of their antennas.

*a* <sup>claim 9</sup>  
 13. The method of ~~any one of claims 9 through 12~~, wherein the transmission of signals from every device "i" of the first type to the respective device "i" of the second type being effected via electric and/or magnetic near field.

14. The method of claim 13, wherein the devices of the first type provides for suppressing of radio transmission of far field.

15. A mobile wireless transmitter for a mobile karaoke system with a body that a performer holds, moves and controls conveniently comprising inside the body or on top of it following components:

a microphone for input of an acoustic signal,

a control panel, a microprocessor, a synthesizer that is integrated with the microprocessor, a scanning device for searching of a music accompaniment with a decoder, a memory that is linked to an interface connector via a multiplexer for plugging-in one of many cartridges; said memory being made in form of a bed or a socket that provides for convenient input and fixing of the cartridge being plugged into the interface connector;

the body contains a device for conversion and processing of the microphone signal and the playback musical signal;

device for generation of final output electric signal and for further transmission said output signal in the form of modulated emission into surrounding space;

an auxiliary decoder for communication with the cartridge via the interface connector, which enables to recognize an authorized legal cartridge that is protected against unauthorized access by an authorized key code device with an access password for preventing operation of the mobile wireless transmitter with an unauthorized and/or illegal cartridge or any other information storage media that has no authorized key coding device with such access password.

16. The mobile wireless transmitter for a mobile karaoke system similar of claim 15, wherein the transmission of signal from the transmitter to the environment shall is effected in a form of electromagnetic radiation within optical band.

17. The mobile wireless transmitter for a mobile karaoke system of claim 15, wherein the transmission of signal from the transmitter to the environment shall is effected in the form of ultrasonic radiation.

18. The mobile wireless transmitter for a mobile karaoke system of claim 15, wherein transmission of signal from the transmitter to the environment is effected in the form of radio waves within vacant allocated frequency band that is not used by broadcast and service communication transmitters.

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19. A cartridge for a mobile karaoke system comprising following components:  
 a body that being inserted into a bed of a mobile karaoke transmitter;  
 a interface connector for plugging into an interface of the mobile karaoke transmitter;  
 a Read-Only-Memory (ROM) package for storage of data in a form of musical compositions  
 and a key identification and coding device in a form of microcontroller that is appropriately  
 programmed, said device is linked to ROM package and ROM package communicates with  
 an auxiliary decoder of the mobile karaoke transmitter via the interface connector to prevent  
 unauthorized access to the data stored in ROM package and to provide for automatic  
 cartridge identification through mechanisms existing in the mobile karaoke transmitter used  
 to prevent input of data from any cartridge or data storage media that is not included in the  
 collection of authorized legal cartridges;  
 the chips of the devices are mounted to a printed circuit board that is installed inside the  
 cartridge body.

20. The cartridge of claim 19, wherein the key coding device is implemented in a form of  
 protected data base with a first password;  
 the auxiliary decoder contains a second password, and  
 said key coding device activates data exchange between the cartridge and the mobile karaoke  
 transmitter only when the first and the second password become identical .

21. A method that prevents use of an unauthorized (illegal, pirate) cartridges and other  
 data storage media in a mobile karaoke system with a legal mobile karaoke transmitter, the  
 method comprising:  
 upgrading a karaoke transmitter with a device for cartridge identification as the one that is  
 included into an authorized collection of legal cartridges,  
 equipping the transmitter with a device that locks reception of data from the interface if it is  
 detected that this interface is linked to the unauthorized data storage media, and  
 supplying all cartridges that are included into the collection of authorized cartridges with a  
 key coding and identification device with an access password.

22. A method to prevent an unauthorized access, copying and use of data stored in a  
 memory of any authorized legal cartridge for a mobile karaoke system, the method  
 comprising  
 upgrading a mobile karaoke transmitter with an auxiliary decoder, and  
 equipping each of an authorized legal cartridge with a data protection capability;  
 said data protection capability is realized as a key identification and coding device that  
 incorporates a microcontroller,

programming said microcontroller accordingly to protect the data stored in a memory of the legal cartridge against unauthorized access, besides, and with a possibility to transfer an identification code of the cartridge to the interface;

compressing data in the form of a musical compositions using a password,

ciphering the data using a code that is known to a legal cartridge manufacturer, and finally recording the data in this form to the cartridge memory;

performing the legal access to the data via a system that incorporates a auxiliary decoder of a mobile karaoke transmitter and the key identification and coding device of the cartridge, said system communicates via the interface and provides direct access to the data after performance of successful check of key codes that are pre-stored in the mentioned auxiliary decoder and the key-coding device of the cartridge.